

PRELIMINARY / MENDMENT
U.S. Appln. No. 11/730,898

Attorney Docket No. Q78889

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A plasma display panel including:
 - (a) a first substrate;
 - (b) a second substrate facing said first substrate;
 - (c) a plurality of first electrodes formed on a surface of said first substrate which surface faces said second substrate electrode, said first electrodes extending in parallel with one another in a first direction, and each having an input terminal through which a pulse is input thereinto;
 - (d) a plurality of second electrodes formed on a surface of said second substrate which surface faces said first substrate electrode, said second electrodes extending in parallel with one another in a second direction perpendicular to said first direction, and each having an input terminal through which a pulse is input thereinto; and
 - (e) a plurality of display cells arranged at intersections of said first electrodes with said second electrodes,wherein a first selection pulse is input into said first electrodes and a second selection pulse is input selectively into one or more of said second electrodes to thereby control whether light is to be emitted in each of said display cells, and
at least one of said display cells has a third electrode formed on said first substrate and being electrically connected to a first electrode other than a first electrode belonging to a display cell to which said third electrode belongs.

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2. (original): The plasma display panel as set forth in claim 1, wherein said third electrode is at least partially composed of a material which does not allow a visible light to pass therethrough.

3. (currently amended): A plasma display panel including:

(a) a first substrate;

(b) a second substrate facing said first substrate;

(c) a plurality of first electrodes formed on a surface of said first substrate which surface faces said second ~~substrate electrode~~, said first electrodes extending in parallel with one another in a first direction, and each having an input terminal through which a pulse is input thereinto;

(d) a plurality of second electrodes formed on a surface of said second substrate which surface faces said first ~~substrate electrode~~, said second electrodes extending in parallel with one another in a second direction perpendicular to said first direction, and each having an input terminal through which a pulse is input thereinto;

(e) a plurality of fourth electrodes extending in parallel with said first electrodes with a primary discharge gap being sandwiched therebetween; and

(f) a plurality of display cells arranged at intersections of said first and fourth electrodes with said second electrodes,

wherein a first selection pulse is input into said first electrodes and a second selection pulse is input selectively into one or more of said second electrodes to thereby control whether light is to be emitted in each of said display cells, and

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at least one of said display cells has a third electrode formed on said first substrate and being electrically connected to a first electrode other than a first electrode belonging to a display cell to which said third electrode belongs.

4. (original): The plasma display panel as set forth in claim 3, wherein said third and fourth electrodes form a preliminary display gap therebetween.

5. (original): The plasma display panel as set forth in claim 4, wherein said third and fourth electrodes are at least partially composed of a material which does not allow a visible light to pass therethrough.

6. (original): The plasma display panel as set forth in claim 4, further comprising a light-shielding layer formed at least partially on said first substrate in alignment with said preliminary discharge gap, said light-shielding layer having opaqueness to a visible light.

7. (currently amended): A plasma display panel including:

- (a) a first substrate;
- (b) a second substrate facing said first substrate;
- (c) a plurality of first electrodes formed on a surface of said first substrate which surface faces said second substrate ~~electrode~~, said first electrodes extending in parallel with one another in a first direction and each having an input terminal through which a pulse is input thereinto;

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(d) a plurality of second electrodes formed on a surface of said second substrate which surface faces said first substrate electrode, said second electrodes extending in parallel with one another in a second direction perpendicular to said first direction, and each having an input terminal through which a pulse is input thereinto;

(e) a plurality of fourth electrodes extending in parallel with said first electrodes with a primary discharge gap being sandwiched therebetween;

(f) a plurality of fifth electrodes extending in parallel with said first and fourth electrodes;
and

(g) a plurality of display cells arranged at intersections of said first and fourth electrodes with said second electrodes,

wherein a first selection pulse is input into said first electrodes and a second selection pulse is input selectively into one or more of said second electrodes to thereby control whether light is to be emitted in each of said display cells, and

at least one of said display cells has a third electrode formed on said first substrate and being electrically connected to a first electrode other than a first electrode belonging to a display cell to which said third electrode belongs.

8. (original): The plasma display panel as set forth in claim 7, wherein said third and fifth electrodes form a preliminary display gap therebetween.

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9. (original): The plasma display panel as set forth in claim 8, wherein said third and fifth electrodes are at least partially composed of a material which does not allow a visible light to pass therethrough.

10. (original): The plasma display panel as set forth in claim 8, further comprising a light-shielding layer formed at least partially on said first substrate in alignment with said preliminary discharge gap, said light-shielding layer having opaqueness to a visible light.

11. (currently amended): A method of driving a plasma display panel including:

- (a) a first substrate;
- (b) a second substrate facing said first substrate;
- (c) a plurality of first electrodes formed on a surface of said first substrate which surface faces said second ~~substrate electrode~~, said first electrodes extending in parallel with one another in a first direction, and each having an input terminal through which a pulse is input thereinto;
- (d) a plurality of second electrodes formed on a surface of said second substrate which surface faces said first ~~substrate electrode~~, said second electrodes extending in parallel with one another in a second direction perpendicular to said first direction, and each having an input terminal through which a pulse is input thereinto; and
- (e) a plurality of display cells arranged at intersections of said first electrodes with said second electrodes,

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wherein a first selection pulse is input into said first electrodes and a second selection pulse is input selectively into one or more of said second electrodes to thereby control whether light is to be emitted in each of said display cells, and

at least one of said display cells has a third electrode formed on said first substrate and being electrically connected to a first electrode A other than a first electrode B belonging to a display cell to which said third electrode belongs,

said method including the steps of:

(a) in at least one of said display cells having said third electrode, by the application of said first selection pulse to said first electrode A, generating priming discharge at a third electrode in said display cell; and

(b) applying said first selection pulse to said first electrode B subsequently to said step (a).

12. (original): The method as set forth in claim 11, further including the step of composing said third electrode at least partially of a material which does not allow a visible light to pass therethrough.

13. (currently amended): A method of driving a plasma display panel including:

(a) a first substrate;

(b) a second substrate facing said first substrate;

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(c) a plurality of first electrodes formed on a surface of said first substrate which surface faces said second ~~substrate electrode~~, said first electrodes extending in parallel with one another in a first direction, and each having an input terminal through which a pulse is input thereinto;

(d) a plurality of second electrodes formed on a surface of said second substrate which surface faces said ~~first substrate electrode~~, said second electrodes extending in parallel with one another in a second direction perpendicular to said first direction, and each having an input terminal through which a pulse is input thereinto;

(e) a plurality of fourth electrodes extending in parallel with said first electrodes with a primary discharge gap being sandwiched therebetween; and

(f) a plurality of display cells arranged at intersections of said first and fourth electrodes with said second electrodes,

wherein a first selection pulse is input into said first electrodes and a second selection pulse is input selectively into one or more of said second electrodes to thereby control whether light is to be emitted in each of said display cells, and

at least one of said display cells has a third electrode formed on said first substrate and being electrically connected to a first electrode A other than a first electrode B belonging to a display cell to which said third electrode belongs,

said method including the steps of:

(a) in at least one of said display cells having said third electrode, by the application of said first selection pulse to said first electrode A, generating priming discharge at a third electrode in said display cell; and

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(b) applying said first selection pulse to said first electrode B subsequently to said step (a).

14. (original): The method as set forth in claim 13, further including the step of forming a preliminary discharge gap between said third and fourth electrodes, wherein said priming discharge is generated at said preliminary discharge gap.

15. (original): The method as set forth in claim 14, further including the steps of:
keeping a fourth electrode of said display cell at a voltage at which discharge is generated at said preliminary discharge gap, in at least a part of a period in which said first selection pulse is applied to said third electrode of said display cell; and

keeping said fourth electrode of said display cell at a voltage at which discharge is not generated at said preliminary discharge gap, in a period in which said first selection pulse is applied to said first electrode of said display cell.

16. (original): The method as set forth in claim 15, further including the step of dividing said display cells into a plurality of display cell groups such that a display cell including a third cell and a display cell including a first electrode electrically connected to said third electrode do not belong to a common group, and dividing said fourth electrodes into a plurality of electrode groups such that fourth electrodes in each of said display cell groups belong to a common electrode group for controlling a voltage of said fourth electrode in each of said electrode groups.

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17. (original): The method as set forth in claim 16, further including the step of successively applying said first selection pulse a plurality of times to a plurality of said third electrodes belonging to any one of said display cell groups.

18. (original): The method as set forth in claim 15, further including the step of keeping said fourth electrode of said display cell at a voltage at which discharge is not generated at said preliminary discharge gap, in a period in which said first selection pulse is applied to said first electrode A of said display cell.

19. (original): The method as set forth in claim 13, wherein a field is divided into a plurality of sub-fields including at least the step of applying said first selection pulse,

at least one sub-field among said sub-fields includes the step of carrying out first initialization which step includes the sub-step of carrying out initialization at said primary discharge gap, and

at least one sub-field among said sub-fields includes the step of carrying out second initialization which step includes the sub-step of carrying out initialization at said primary discharge gap, but does not include the sub-step of carrying out initialization at said primary discharge gap.

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20. (original): The method as set forth in claim 14, further comprising the step of composing said third and fourth electrodes at least partially of a material which does not allow a visible light to pass therethrough.

21. (original): The method as set forth in claim 13, further comprising the step of forming a light-shielding layer at least partially on said first substrate in alignment with said preliminary discharge gap, said light-shielding layer having opaqueness to a visible light.

22. (original): The method as set forth in claim 13, wherein a period of time from the generation of said priming discharge in said display cell until the application of said first selection pulse to said first electrode belonging to said display cell is equal to or smaller than 100 microseconds.

23. (original): The method as set forth in claim 22, wherein said period of time is equal to or smaller than 20 microseconds.

24. (currently amended): A method of driving a plasma display panel including:

- (a) a first Substrate;
- (b) a second substrate facing said first substrate;
- (c) a plurality of first electrodes formed on a surface of said first substrate which surface faces said second ~~substrate electrode~~, said first electrodes extending in parallel with one another in a first direction, and each having an input terminal through which a pulse is input thereinto;

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(d) a plurality of second electrodes formed on a surface of said second substrate which surface faces said ~~first substrate electrode~~, said second electrodes extending in parallel with one another in a second direction perpendicular to said first direction, and each having an input terminal through which a pulse is input thereinto;

(e) a plurality of fourth electrodes extending in parallel with said first electrodes with a primary discharge gap being sandwiched therebetween;

(f) a plurality of fifth electrodes extending in parallel with said first and fourth electrodes;
and

(g) a plurality of display cells arranged at intersections of said first and fourth electrodes with said second electrodes,

wherein a first selection pulse is input into said first electrodes and a second selection pulse is input selectively into one or more of said second electrodes to thereby control whether light is to be emitted in each of said display cells, and

at least one of said display cells has a third electrode formed on said first substrate and being electrically connected to a first electrode A other than a first electrode B belonging to a display cell to which said third electrode belongs,

said method including the steps of:

(a) in at least one of said display cells having said third electrode, by the application of said first selection pulse to said first electrode A, generating priming discharge at a third electrode in said display cell; and

(b) applying said first selection pulse to said first electrode B subsequently to said step (a).

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25. (original): The method as set forth in claim 24, further including the step of forming a preliminary discharge gap between said third and fifth electrodes, wherein said priming discharge is generated at said preliminary discharge gap.

26. (original): The method as set forth in claim 24, wherein a field is divided into a plurality of sub-fields including at least the step of applying said first selection pulse,

at least one sub-field among said sub-fields includes the step of carrying out first initialization which step includes the sub-step of carrying out initialization at said primary discharge gap, and

at least one sub-field among said sub-fields includes the step of carrying out second initialization which step includes the sub-step of carrying out initialization at said primary discharge gap, but does not include the sub-step of carrying out initialization at said primary discharge gap.

27. (original): The method as set forth in claim 24, further comprising the step of composing said third and fifth electrodes at least partially of a material which does not allow a visible light to pass therethrough.

28. (original): The method as set forth in claim 24, further comprising the step of forming a light-shielding layer at least partially on said first substrate in alignment with said preliminary discharge gap, said light-shielding layer having opaqueness to a visible light.

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29. (original): The method as set forth in claim 24, wherein a period of time from the generation of said priming discharge in said display cell until the application of said first selection pulse to said first electrode belonging to said display cell is equal to or smaller than 100 microseconds.

30. (original): The method as set forth in claim 29, wherein said period of time is equal to or smaller than 20 microseconds.